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## Outcome after Open Repair of Ruptured Abdominal Aortic Aneurysm in Patients >80 Years Old: A Systematic Review and Meta-analysis

Robert A. Pol · Michel M. P. J. Reijnen ·  
Clark J. Zeebregts

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Dear Sir,

We have read with great interest the report by Biancari et al. [1] on the outcome after open repair of ruptured abdominal aortic aneurysm (RAAA) in patients older than 80 years. We agree with their conclusions on the acceptable survival rates for open repair of RAAA in octogenarians. We also have extensive experience treating both octo- and nonagenarians with (RAAA) [2, 3] at comparable survival rates as reported by Biancari et al. We therefore encourage proper research within this patient group to gain more insight into possibilities and limitations that may be encountered.

Although we understand that a certain time limit was set for the inclusion and drafting of their manuscript, we feel that our own published papers could have added relevant information to the discussion and should have been added to the meta-analysis. Second, we feel that the article falls short answering important questions regarding some specific features. Although they clearly show that octogenarians with a RAAA can be treated conventionally, they do not mention the positive outcome after endovascular repair (EVAR) in this vulnerable group. Both our study, as well as a recent publication on one of the largest series of octogenarians with AAA, found a significant difference in hospital length of stay, ICU

length of stay, and in-hospital and overall mortality in favor of EVAR compared with open repair [3, 4]. In another report, designed to define cost-effectiveness of a preferential endovascular strategy in patients with RAAA, we found that in-hospital mortality dropped from 31% (historical open repair control group) to 18% (for endovascular repair of selected patients). Even reports on nonagenarians concluded that despite advanced age, these patients may benefit from an intervention at acceptable morbidity and mortality rates after EVAR [2, 5].

For reasons of a potential selection bias, EVAR patients were excluded from the current analysis. Especially for the elderly, a short hospitalization period and quick return to the former level of functioning is of vital importance. These are all benefits of endovascular repair. We therefore believe that this should be the first treatment option. Various studies made clear that octogenarians often were labeled unfit for open repair due to significant comorbidities and consequently were offered EVAR. These important criteria applicable in elective setting may be even more important with a devastating event, such as RAAA. Whereas frequent and accurate monitoring for endoleak development or stent graft migration is essential after EVAR in a younger population, these are of much less importance in the elderly with a natural limited life expectancy.

In conclusion, octogenarians affected by RAAA can be safely treated by open or endovascular repair. However, the preferred treatment of choice should be EVAR, because octogenarians benefit most from its minimal invasive character and short-term hospitalization. In case of hemodynamic instability or unsuitable anatomy for EVAR, patients with a good baseline functional status can be offered open repair with a median survival of 2.8 years [3].

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